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Leg and Thigh Amputations in Obliterative Arterial Disease

The authors discuss their experiences with 128 consecutive leg and thigh amputations performed on 113 patients with obliterative arterial disease; 64 had diabetes as well as arteriosclerosis, 45 had arteriosclerosis and 4 had thromboangiitis obliterans. Most of the patients (77 percent) were over 60; 37 percent were over 70 years old.

On the basis of such factors as general condition of the patients preoperatively, age, cardiovascular status and renal function, only 14 of the 113 patients were felt to be in good condition; 49 were felt to be in fair condition, 35 in poor condition and 15 in a precarious state. The level of the main arterial occlusion, as determined by palpation of pulses and oscillometry, was in the femoral artery or higher in 85 patients. In 10 patients the popliteal artery was occluded and in 18 the level of occlusion was distal to the popliteal artery. All the patients had well established gangrene or ulcerated areas resulting from gangrene. In all but 13 patients there was infection of some degree.

In most of the patients the local condition was such that it was apparent that a major amputation was imperative. In exceptional cases every effort was made to conserve the limb. The circulatory status was carefully evaluated, the affected foot was kept in the position of optimal blood flow, somewhat below the level of the heart, the foot was carefully cleansed and kept in sterile dressings, foot boards were used to prevent pressure on the toes from bed clothes, antibiotics were given for infection and necrotic tissue was carefully removed. In addition, sterile saline compresses kept at body temperature were used alternately with dry or petroleum jelly dressings as necessitated by softening of the skin and the threat of maceration. In certain instances, prior to major amputation, other measures were carried out, e.g., extensive local debridement or amputation of digits; transmetatarsal amputation (unsuccessful); sympathetic, spinal or peripheral nerve block, for studies of vasomotor response, and lumbar sympathectomy. Whenever infection was not brought under good control, the infected foot was removed surgically or was excluded by tourniquet and refrigeration. Every effort was made to bring any existing diabetes under the best possible control.

Spinal anesthesia was considered the anesthesia of choice and was used for 101 of the operations. Depending on the patient's age and size, from 4 to 10 mg. of powdered tetracaine (pontocaine) hydrochloride was used, being dissolved, as a rule, in 1 cc. of spinal fluid, 1 cc. of a solution of epinephrine or ephedrine and 1 cc. of 10 percent dextrose. The solution was injected in the fourth interspace with the patient lying on his side and with the affected extremity down. After injection the foot of the table was lowered and the patient kept on his side for 15 to 20 minutes. There was always good anesthesia of the involved extremity and generally little or no fall in blood pressure. The amputation was carried out with the patient supine. The leg and thigh were generally prepared and draped out so that a thigh amputation could be performed if the circulation were judged inadequate for a leg amputation.

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Most of the amputations were carried out more or less according to the classical methods. Great care was taken to achieve complete hemostasis, and the wounds were thoroughly irrigated with isotonic sodium chloride solution. Every effort was made to avoid traumatizing the tissues; the skin was approximated without the use of forceps in order to obviate any necrosis which might result from their use. Fine black silk ligatures and sutures were used throughout. None of the wounds were drained, and the skin edges were brought together with especial care. The major nerves were treated by ligation and high division. Muscles and tendons were sectioned in such a fashion as to obtain a slightly conical stump. Dry dressings were secured in place with a gently applied elastic bandage. A posterior splint was used in the case of leg amputations.

Of the 128 amputations performed, 121 were carried out as primary definitive procedures, while 7 were reamputations necessitated by difficulty with the first amputation stump. Sixty-one of the primary operations were leg amputations, 53 were supracondylar amputations, of which 31 were done according to the technic of Callander, and 7 were midthigh amputations. Four of the reamputations were open amputations, 2 were closed midthigh and 1 a closed supracondylar amputation. During the period covered by this survey, there has been a progressive tendency toward the use of leg amputations in preference to thigh amputations. Twenty of the 113 patients (15 with diabetes and 5 with arteriosclerosis) either had undergone major amputation of one lower extremity prior to being seen or had required major amputation of both lower extremities at some time during the 4 years of this study. The great majority of the amputations were done by the members of the resident house staff, usually by the junior residents.

It is apparent that major amputations for gangrene resulting from obliterative arterial disease and diabetes can be carried out with reasonable safety. The over-all mortality rate was 6 percent; 5 of the 8 patients who died were thought to be in a precarious condition before operation and the other 3 in poor condition. All of the deaths were apparently the result of cardiovascular difficulties.

There were no deaths in this series from infection, shock or pulmonary embolism, complications which accounted for a significant proportion of deaths in the past. Among the major factors involved in the reduction of fatal postoperative complications, are the use of penicillin and other antibiotics and preoperative exclusion of the infected foot either by guillotine amputation above the ankle or by tourniquet and refrigeration. Other factors thought to be important include proper regulation of diabetes if present, the use of one-leg spinal anesthesia, early ambulation and supervised exercise of the extremities in bed, the avoidance of shock, adequate fluid replacement, and rigid adherence to the principles of gentleness in handling tissues and of careful hemostasis.

In this series there was no difference in mortality between leg and thigh amputations. The over-all mortality rate was somewhat greater (10 percent) in patients with arteriosclerosis than in those with diabetes (2.7 percent). The arteriosclerotic group were generally older than the diabetic group and presumably were more susceptible to cardiovascular complications.

It is the authors' conviction that in the future they should be able to reduce substantially the incidence of wound complications. Experiences to date have emphasized the importance of closing the stumps with loose skin flaps. In some of the cases it is apparent in retrospect that the flaps were not loose enough at the time of closure, a failure much more often due to insufficient conical resection of the large muscle masses, especially in leg amputations, than to insufficient resection of bone. Their experiences have also shown that the use of tourniquet and refrigeration should be extended to cases of moderate or even minimal infection. The relative merits of guillotine amputation above the ankle and of tourniquet and refrigeration in case of serious infection must be established by more experience. Closer supervision and better nursing care should make it possible to avoid injury to the healing stump, which was responsible for difficulty with the wound in 4 of their cases.

At the present time the authors feel justified in continuing to carry out leg amputation by preference. The leg stump is a particularly comfortable stump. It is easily fitted with a prosthesis and provides good knee action. Furthermore, it adds considerably to the patient's stability even if he becomes confined to a wheel chair or, for that matter, bedridden. The possibility of bilateral amputation increases each year the patient survives. Pulsation in the popliteal artery is not necessary for a successful leg amputation. The principal contraindications to amputation below the knee are severe flexion contractures at the knee, gangrene or infection extending proximally up to the desired level of amputation and inadequate blood supply. The policy of draping the extremity so that amputation can be carried out either through the leg or thigh and of using the gross vascularity noted on trial incision into the leg as the principal guide to adequacy of circulation is very helpful. It was found more reliable than any method of preoperative evaluation.

The authors suggest that better results are obtained when supracondylar amputations are carried out in the more or less classical manner than when they are done by the Callander technic. Although they have generally used longer anterior and shorter posterior skin flaps in thigh amputations, it is evident that flaps of more equal length should be used if there is any doubt whatsoever concerning their viability. With modern prosthesis a well-healed scar over the end of the stump is generally satisfactory, provided the stump is otherwise a satisfactory one.

Lumbar sympathetic denervation is of real value in the prevention of gangrene and in the healing of superficial necrosis and ulceration. It is undoubtedly also a useful procedure in certain cases as a measure to make a successful amputation at a low level more likely. In the presence of well-established gangrene and infection which obviously commits one to a major amputation, as was the case in most of these patients, sympathectomy would not often seem a justifiable procedure. (A. M. A. Arch. Surg., Oct. 1951, H. B. Shumacker, Jr. & T. C. Moore)

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Postoperative Nasal Bleeding

Instances of postoperative nasal hemorrhage of any magnitude are comparatively rare, considering the frequency of operative procedures upon the nose. The seriousness of this complication when it does occur, however, warrants thorough consideration by those who do nasal surgery. A specific type of standard procedure for management of such cases should be kept in mind to be applied when these emergencies arise. This procedure should be made a part of the intern-training program, for a good result in rhinoplasty is not infrequently jeopardized by an intern's overzealous packing. Furthermore, improper packing and the attendant manipulation may increase the bleeding.

There are 3 types of nasal hemorrhage. Primary hemorrhage, which occurs at the time of surgery, can usually be controlled at the moment. Secondary hemorrhage occurs in the first 24 to 48 hours. This is usually controlled by anterior repacking, application of ice to the nose, and/or administration of anticoagulants. Delayed hemorrhage, that which breaks out after the packing has been removed, usually on the 6th to 8th postoperative day, is the type which causes most concern.

All precautionary measures that are usually taken to assure good postoperative recovery must be exercised in surgery of the nose. As in all other surgery, a carefully taken, complete history and thorough physical examination are essential to the proper appraisal of the patient. It is desirable to elicit any history of trauma or previous nasal surgery. It is well to remember that all patients have a greater tendency to bleed in warm weather. This may be caused by the vasodilation that occurs at this time. These observations should be made with factors of bleeding in mind: (1) the amount of bleeding from any recent injury; (2) the menstrual history, since women bleed more during menses; (3) the bleeding and/or coagulation times and (4) other laboratory findings, such as urinalysis, and complete blood count.

The use of coagulants such as "koagamin" (a hemostatic containing oxalic and malonic acid) and vitamin K, preoperatively when the history suggests it and postoperatively as an adjunct to local measures, will be of benefit. The use of morphine sulfate will allay much of the apprehension. However, it is dangerous to have the patient too well narcotized, lest bleeding occur of which the patient is not cognizant. A patient can swallow a large amount of blood in a relatively short time.

During the operation, the bleeding can be minimized with use of epinephrine in the anesthetic solution, by keeping the nostril packed on the side not involved in the immediate procedure, and with the free use of packing strips soaked in epinephrine solution during the surgery. If the operator is careful to keep close to the bone subperiosteally when elevating the soft tissues, no large vessels will be severed. The arteries of the nose contract rapidly if they are severed and there is no possibility of using a hemostat. Whenever the nose is packed, either during or after the surgery, it has been found that dry gauze stays in place the best. Careful packing of the nasal cavity after surgery will stay any tendency toward minor bleeding.

When hemorrhage does occur, both anterior and posterior nasal packing must be employed. Before any packing is done for hemorrhage, an attempt should be made to visualize the area with a bright light. The clots must be removed to ascertain the area of hemorrhage. It may be possible at this time to cauterize a bleeding point. One of the coagulants, gelfoam or oxycel may be placed over the area and packed in place with the strip packing. This is almost impossible to accomplish in the home. It is frequently necessary and advisable to readmit the patient to the hospital for observation and packing. When the patient arrives at the hospital, blood typing should be done. If the hemorrhage has been profuse or of long duration, blood transfusions should not be delayed longer than the time needed for the emergency laboratory work. It is best to keep the patient's head slightly elevated, at about a 20-degree angle, rather than flat or upright.

Profuse epistaxis is almost always unilateral. If it is of the bilateral type, the two nares can be packed alike. However, only one posterior packing is necessary. If the hemorrhage follows a rhinoplasty, it is well to pack both nasal fossae anteriorly to equalize pressure and maintain alignment of the nose.

The authors believe that the posterior nasal pack should be made up with 3 strings rather than the 2 usually used. The pack is made of folded gauze. Iodoform gauze can be left in place longer, and has the advantage of being antiseptic. Two of the strings are tied to a soft rubber catheter that has been passed through the bleeding nasal fossa into the mouth. Care must be taken to be sure the pack is seated well up in the nasopharynx against the choanae. This can be assured by digital palpation. The strings are held taut anteriorly while dry 1/2 in. (1 cm.) gauze strips are packed well back against the posterior pack and slowly forward until the entire nasal fossa is packed full. The excess packing is bunched at the anterior nares, or a small piece of gauze is rolled and placed at this point between the 2 strings, which are then tied over it to hold it in place. This final tying makes all the packings an integral unit. The string from the mouth can be anchored to the cheek with a small piece of adhesive tape.

Hemostatics, such as absorbable gelatin sponge or oxidized cellulose may be used as adjuncts to the packing described. However, in general, this is not routinely necessary over bleeding areas. (A. M. A. Arch. Otolaryng., Oct. 1951, D. McC. Mayer & W. A. Swanker)

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Notes on a Series of Brain Tumors

From 1 January 1931 to 1 January 1941, 891 verified cases of brain tumor were catalogued in the Registry of the Department of Neurosurgery at the University of Pennsylvania and Graduate Hospitals (Philadelphia). Eighty-nine of these tumors were verified at autopsy without previous operation, leaving a group of 802 cases in which surgery was performed. Since there is now a 10 to 20 year survival period in this group, a record of the results seems justified.

In this group, between 150 and 200 cases were allotted to the various senior residents who had completed 2 years of training. Rather less attention than usual was paid to the immediate surgical mortality. Every reasonable attempt was made to extirpate a tumor in as complete a fashion as possible, without condemning the patient to a permanent and crippling neurologic deficit. Many of the patients recorded as having a recurrence died following a second operative intervention. The authors' interest lies in the final outcome, regardless of the number of operations.

Of the 802 patients operated upon between 1931 and 1941, 162 or 20 percent, were alive in 1950. An additional 35 patients are known to have lived 10 years or longer and then died, 19 of intercurrent disease and 16 from recurrence of the tumor. Of the group of 802 patients, therefore, 197, or 24 percent, lived for 10 years or more after the tumor was attacked. An additional 41 lived 5 years or more and died, 28 from recurrence, 13 from other disease. Among these 238 patients living 5 years or more 173, or 72 percent, returned to work. In the entire series of 891 cases, 564, or 63 percent, were dead within 5 years.

Horrax has pointed out that the most favorable results following brain tumor surgery occur when the tumor exposed falls into one or the other of the following pathologic groups: meningioma, pituitary adenoma, cystic glioma or acoustic neuroma. In a number of instances, patients with the rarer types of intracranial lesions have shown 10 to 20 year survival periods. The present series of 197 cases in which the patients lived 10 years or longer includes 59 meningiomas, 44 pituitary adenomas, 39 gliomas, 13 hemangiomas, 9 craniopharyngiomas, 8 acoustic neuromas, 5 ependymomas and 20 in the miscellaneous group.

In reviewing this series of tumors, with reference to the gliomas, the pathology and the position of the tumor, and more especially the pathology, determine the outcome. Solid gliomas present a fairly hopeless situation, unless they are so situated that a lobectomy can be performed, that is, in the right frontal, right temporal, either occipital lobe or in either cerebellar hemisphere. The cystic gliomas, as has long been known, have a much better prognosis. The surgeon's luck in exposing a lesion of the proper type favorably placed is more important than his skill in handling gliomas. But the angle tumors, the meningiomas and the pituitary adenomas require both skill and experience, and some small element of luck as well. These are benign tumors, sometimes, unfortunately, very awkwardly situated, and if they can be completely removed or if a pituitary adenoma can be thoroughly gutted without damage to adjacent structures, they do not recur.

It would seem from this review of a representative series that roughly 40 percent of brain tumors are relatively benign. Careful surgery, in these groups particularly, should result in about 25 percent 10-year survival and a 70 percent return to work, temporarily, at least, in any large series of cases of this kind. (J. Neurosurg., Sept. 1951, F. C. Grant & M. P. Sayers)

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Air Embolism

There are 2 types of air embolism, differing from each other in the site of entrance of the air, its distribution within the blood vessels and its effects.

In arterial embolism, the air enters a pulmonary vein, passes through the left ventricle and reaches systemic arteries of the upper part of the body. A small amount of air can block an important artery completely; so the injection of only a few cubic centimeters of air may be fatal if it reaches a cerebral or coronary artery. If air enters the cerebral circulation - this is common if the head is higher than the aortic arch - neurologic manifestations such as aphasia, blindness, hemiplegia or convulsions may result. In such cases, ophthalmoscopic examination may reveal air bubbles in the retinal arteries. A marbled appearance of the skin suggests air in the superficial vessels, and is often found in the superiorly located portions of the body. A small incision in the skin over the upper part of the body may show that the blood contains air bubbles. This is known as "air bleeding," and is proof of the existence of arterial air embolism. Myocardial infarction has been demonstrated by electrocardiography and at post mortem.

Arterial air embolism is usually a complication of artificial pneumothorax, thoracentesis or thoracic surgery. Air is either injected accidentally in the course of the procedure, or venous pathways are opened up and air is sucked into them before clotting can occur.

The treatment of arterial air embolism is postural and supportive. The head should be lowered at once. This will not prevent emboli from reaching the coronary circulation, and will not dislodge air bubbles already present in the cerebral circulation, but it will prevent any more air from reaching the brain. External heat should be applied if necessary, treatment for shock should be given if the patient goes into shock, and adequate control of the patient should be provided if there are convulsions.

In venous or pulmonary air embolism, air enters a systemic vein and passes into the right side of the heart. If the quantity of air is sufficient, a typical chain of events follows. First, there is a sensation of bubbling in the left chest, in the region overlying the pulmonary conus. At the same time, the presence of air in the right ventricle produces a churning sound which can often be heard without a stethoscope, and which is known as a mill-wheel murmur. An air-trap forms in the right ventricle, causing obstruction. Obstruction causes elevated venous pressure, cyanosis and often syncope through cerebral anoxemia. Obstruction also causes forward cardiac failure, with deficient cardiac output and a rapid, feeble pulse. Some air may pass through the right side of the heart into the lungs, where it may cause embolism of small and medium-sized pulmonary arteries. The symptoms are dyspnea, hyperpnea and tachypnea, and these may be so marked that alkalosis and tetany develop.

Venous air embolism may result from surgical operations, from air injections, or from the accidental entrance of air into intravenous apparatus. The treatment consists principally of putting the patient in the left lateral position, which favors the displacement of the air trap and relief of the obstruction. Shock should be combated if it exists. (Ann. Int. Med., Oct. 1951, A. C. Cohen, G. C. Glinsky, G. E. Martin & K. I. Fetterhoff)

Heart Disease of Unknown Etiology

Cases of heart disease for which no etiological agent could be found have been described in the literature from time to time, classified into two large groups, namely, myocarditis of unknown etiology and idiopathic hypertrophy of the heart. The authors present 9 additional cases of heart disease of unknown etiology observed in a 5 year period of study of both clinical and post-mortem material. In their attempts to determine the etiology of these cases of heart disease, an effort was made to exclude some of the more common causes of heart disease: syphilis, previous hypertension, bronchopulmonary disease, anemia, trauma, nutritional disturbances, amyloidosis, coronary artery disease, rheumatic fever and pericarditis.

When these patients were admitted for study, many diagnoses were entertained. In several cases recurrent pericardial effusion of tuberculous or unknown etiology or chronic constrictive pericarditis were considered. This difficulty in differentiation arose because of the findings of congestive heart failure, low pulse pressure, pulsus paradoxus, distant heart tones, and the fluoroscopic and electrocardiographic findings. This presented a distinct difficulty in 3 cases and led to attempted pericardial paracentesis in 2 instances. Frank blood was obtained in both.

One patient died while being anesthetized for pericardial resection. In this case cardiac enlargement was not believed to be incompatible with constrictive pericarditis. In a series of 53 patients reported by Paul et al., enlarged cardiac silhouettes were found in the presence of constrictive pericarditis in 54.7 percent. Roentgenkymographic and angiocardiographic studies had been performed in the present case, and even these procedures did not exclude the possibility of chronic pericardial disease.

Various authors have made reference to myocarditis developing after antecedent infections and to subsequent cardiac hypertrophy and dilatation, but the evidence for this is much less specific than in the myocarditis associated with diphtheria, rickettsial and viral diseases. The data obtained in cases of heart disease of obscure origin are vague, ambiguous and rarely convincing when considered against the background of the severe heart disease which these cases show. Conversely, in rheumatic fever, after recovery from acute rheumatic myocarditis, fibrosis and hypertrophy are uncommon unless there is resultant valvular deformity. It is difficult to assume that minor illness might result in such severe heart disease occurring months to years after the infection in a few individuals, yet a vast majority of persons suffering from the same diseases might be allowed to escape without cardiac sequelae. It is interesting to note in this series that the majority of patients complained initially of a "cold". Such a history might well lead to the presumption that an infectious illness preceded the onset of heart disease. Careful interrogation, however, revealed that these symptoms were actually those of incipient congestive failure.

The pathological changes observed in this series were those of hypertrophy with varying degrees of fibrosis and necrosis with or without cellular infiltration, and are believed to be of degree rather than of character. The degree of

changes seems to bear no constant relation to the duration of the known clinical symptoms or to any known specific etiological agent. A review of several series of patients who clinically and pathologically were similar to those being reported was made. The pathologic myocardial changes varied from hypertrophy alone to hypertrophy associated with severe fibrosis and necrosis. It has been pointed out that hypertrophy may result in areas of necrosis which have been described pathologically in some cases as myocardial infarction in the absence of coronary thrombosis or embolism. The increased muscle mass in cardiac hypertrophy may exceed the functional capacities of the capillaries, impairing tissue metabolism; this may result in an ischemic myocardial necrosis. Cellular infiltrations may be the result of congestive failure or may be associated with ischemic necrosis. It is known that the histological picture, said to be due to inflammatory disease, may well be the result of a degenerative process initiated by cardiac hypertrophy. Parenthetically, the exciting cause of hypertrophy is as obscure as are those exciting causes listed for so-called myocarditis with resultant hypertrophy of heart muscle.

In attempting to find factors which may be responsible, the authors conjecture that racial factors may be important. Seven of 9 patients in the series were young Negro adults. This incidence is higher than the racial distribution in the hospital population. In 3 of the authors' cases there was a family history of "heart attacks" in early adult life.

The physiology of cardiac hypertrophy is poorly understood even when the exciting cause of hypertrophy, lengthening of the muscle fibers, is present. The stimulus or stimuli for fiber lengthening are not apparent in these cases. In this series it is believed that some stimulus or stimuli other than previous inflammation must exist to produce cardiac hypertrophy. It is unknown whether there is any similarity in the chain of events that led to hypertrophy in the cases reported here. The authors believe that attention should be directed to the study of other physiological factors in cardiac muscle hypertrophy, particularly in derangements of the metabolism of the heart muscle cell. (Am. Heart J., Oct. 1951, R. R. Davies, R. J. Marvel & P. D. Genovese)

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A Community Heart Program

In the 3 years since the Newton Heart Demonstration Program was initiated in Newton, Massachusetts, much has been learned about the community approach to the problem of heart disease. It has been found that the public health aspects of heart disease can be dealt with and that public health services can aid physicians in their management of heart problems in the community.

Active participation of the physicians in planning the community program has resulted in the development of acceptable community services in case finding, prevention of rheumatic fever and subacute bacterial endocarditis, nutrition, community nursing and rehabilitation. It has been learned that several hospital services can be carried over into the community to help to delay the progress of

heart disease and to prevent many unnecessary complications. Supplementary public health services in the community have enabled the physicians of Newton to provide the same excellent medical care for cardiac patients in the home that they provide for their patients in the hospital.

The management of patients with heart disease is a long-range problem. It is a challenge to the physician to keep his patient a useful member of the community despite the handicap of his disease. It is of little value to save a youngster with acute rheumatic fever by giving ACTH if he is later allowed to develop a recurrence for want of prophylactic measures, or to save a patient in acute congestive failure only to have failure develop again through the patient's inability to follow a low sodium diet.

From the experience in Newton, the real value of this type of program lies in its contribution to the management of the cardiac patient by the local physicians. An unrecognized case of heart disease in the community can be discovered and the patient placed under medical care without planting unnecessary fears in his mind or in the minds of his family. Fear campaigns have been strictly avoided in all aspects of the program.

It has been found that the public, health agencies and industry all readily cooperate in such a program. Physicians gave ample support as soon as they were convinced that the program was being planned and guided by a committee formed from their own ranks. The program has been developed and supported by the staff of the Newton Health Department, the Massachusetts Department of Public Health, physicians on the Cardiac Program Committee and its subcommittees and by members of the U. S. Public Health Service, working in cooperation.

The actual work done during the past year has indicated that some phases of the problem of heart disease lend themselves more readily to a community approach than others; that some yield a greater return for effort and money invested; and that some services offered are more quickly used by the medical profession. Among the more productive activities are physician education, screening for possible heart disease, diet education for both the cardiac patient and the overweight person (in both weight reduction and low sodium problems), rheumatic-fever prevention and the training of technicians in making prothrombin-time and clotting-time determinations.

In the monthly lectures of the Newton Postgraduate Heart Institute the practical aspects of the management of the cardiac patient is stressed. Nearly half the time is spent in answering specific questions presented to the leaders in writing by those attending. Mimeographed summaries of each session are sent to every physician in the community.

It is pointed out that all the major activities of the Newton Heart Program were among those later recommended for communities by the National Conference on Cardiovascular Diseases. The experience in Newton has shown that such cooperative efforts of private physicians, public health agencies and the general public can create wholesome relations and help in solving some of the problems of heart disease. (New England J. Med., 18 Oct. 1951, E. E. Kattwinkel, V. A. Getting, E. M. Morris & W. J. Zukel)

Postural Rest in Pulmonary Tuberculosis

Rest is the most recognized and approved therapy in tuberculosis. The application of postural rest in tuberculosis is not a new idea but is a neglected one. In the authors' hospital (South Africa), since the introduction of this form of therapy in 1947, the results have been so overwhelmingly superior to bed-rest alone or combined with collapse therapy, that, although scientifically it is difficult to make a truly controlled experiment, it has gained their enthusiasm.

The method of applying postural rest varies a little from ward to ward, depending on how strongly the physician in charge feels about the principles involved, and which principle he considers the more important.

Dilwynn Thomas, in a personal communication considered that the secretions dammed up in the dependent cavity and became fibrosed. The authors disagree with this concept and think that the following principles are applicable:

1. By tipping the foot of the bed to an effectively high angle of about 20 degrees, providing the patient maintains the position for long periods, there is an apparent hyperemia in that part of the lung which is normally least well supplied with blood on account of its relative immobility during pulmonary excursions, viz, the superior retroradicular area, which is also that most frequently involved in pulmonary tuberculosis.

2. By positioning the patient with unilateral cavitation onto the affected side, there is a restriction of movement of the chest wall on that side, and a movement of the heart and mediastinum producing relaxation of pulmonary tissues. The weight of abdominal organs on the diaphragm may enhance this splinting effect.

3. Drainage, even from apical cavities, appears to be improved. Salkin, Cadden and McIndoe declare that only a small number of cavities have dependent drainage, and that the majority of cavities drain from bronchi arising from the upper parts of the cavity wall. From observation of the rapid disappearance of tension cavities under this postural regime, it is suggested that in tracheobronchial tuberculosis with obstruction of the outflow of air from a segmental bronchus, the change in position may either render the bronchus patent or block it entirely, so producing cavity closure, which, if maintained for long enough is permanent.

The methods of applying the principle of posture to patients suffering from pulmonary tuberculosis depends partly on which of these factors is regarded as most important. Where the theory of hyperemia is regarded as the most important, it is considered sufficient that the patient maintain the tilted position for almost 24 hours a day, being allowed freedom to move from side to side as inclination dictates. The majority of patients with unilateral cavitation are encouraged to lie for most of the day on the affected side, to effect partial immobilization.

The foot of the bed is tilted, on solidly built blocks, to an angle of about 20 degrees. This degree of tilting may be gradually achieved over a period of several days on graduated blocks. When patients at first complain of insomnia,

or dyspepsia after meals, the bed may be brought down for the night or for a short period after meals till their bodily mechanics have adjusted themselves, and their enthusiasm and optimism bolstered up sufficiently for them to accept the treatment in its entirety.

For the average case the posture should be maintained for almost 24 hours a day. The patient is permitted a small pillow under the head. He should learn to eat, read and write in this position. Often these latter activities are so hampered that somnolence is easier. After an initial period of complete bed rest the authors allow patients to attend to the major operations of their toilet once a day, in the bathroom, and when progress indicates, to have full bathroom privileges while on postural therapy. Giddiness, experienced when the verticle position is assumed, makes them quite anxious to return to their tilted bed.

The tendency of patients to sit up against the bars of the bed or to raise their shoulders on doubled pillows makes a parody of the whole procedure and calls for intensified efforts on the part of the doctor and staff to make the patient wish to help himself. It is often surprisingly difficult.

Patients who have become quiescent and fully convalescent have been advised to maintain the tilted position at night after return home. Some, who have returned to work at a stage of unstable but improved disease, as a result of economic pressure upon their families, have continued to improve and heal to an extent quite unexpected and convincing; some postural rest is better than none at all.

Indications. From minimal infiltrations to gross bilateral disease there is seldom any reason why postural therapy should not be used as part of the treatment program. It is safe and free from possible complications and, the authors feel, more effective than simple bed rest.

A trial of postural therapy in the initial waiting period, during which the patient is assessed, may save a patient the dangers of collapse therapy; or, where collapse therapy already exists, with only partial success, postural therapy may save him the additional methods of collapse employed to augment an unsuccessful result. Major surgery was avoided in 1 case in which lobectomy was being considered.

Recent acute infiltrations of one or both lungs such as might be considered suitable for streptomycin or other chemotherapy have shown dramatic response. In 1 such case presented it is questioned whether bed rest, as such, would have achieved the same result. Upper lobe cavities have shown particularly satisfying response.

Postural rest, chemotherapy and collapse therapy should be complementary parts of the therapeutic regime. The addition of phrenic paralysis, to give more adequate relaxation of pulmonary tissue, and above all to tide a patient over the period when he is starting to get up, is advocated.

The most definite contraindication to this form of treatment is a history of peptic ulcer, or persistent dyspepsia during the treatment. A quiescent ulcer may become active as a result of posture being maintained. A failing left heart makes the maintenance of postural treatment, as described here, impossible.

Pregnancy, however, can go to full term in the normal way, with the fetal position unaffected by months spent in the tilted position.

Asthma and emphysema are not always contraindications to the therapy. Elwell (Australia) has treated patients with a variety of chronic pulmonary conditions, including asthmatics and cases of right heart failure, on postural therapy with encouraging results. If the patient is brought to the point of desiring the treatment himself, no discomfort is noted in many cases. Elwell maintains that in nontuberculous asthmatics an attack can often be aborted or prevented by the assumption of the tilted position.

It has been the authors' custom until recently to interrupt the postural treatment temporarily when a patient has had hemoptysis or heavily blood stained sputum. Elwell however, reports that he has, for a long while, maintained the position during hemoptysis with benefit, and finds the dreaded spread from bronchial embolism much less frequent.

Occasionally the cavity drainage seems to be interfered with, rather than improved in a particular case, which in all other respects appears similar to many other successfully treated cases, and the patient becomes toxic and febrile, cough may increase and sputum be retained. One should be prepared to abandon the treatment when this occurs. Diminution of cough and of troublesome wheezing is a noticeable feature of the early days on postural therapy. (Dis. Chest, Oct. 1951, B. A. Dormer, E. Greathead, G. Pirrie, P. Smit, T. Randall & M. van Rensburg)

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The Results of Various Operative Procedures in Acute Congestive Glaucoma

The immediate objectives of the treatment of acute glaucoma are: (1) to conserve vision, (2) to relieve pain, (3) to effect a safe and permanent arrest of the condition with the least possible risk of complications. A survey was undertaken in 157 cases to determine which of the various operative procedures offered the best prospect of attaining the third objective.

These cases fell into 3 general groups, depending on severity.

Group I. In the first group were 32 patients admitted late in the course of the disease, often completely blind, with advanced or recurrent inflammatory glaucoma, whose eyes showed organic changes already so established that the usual and conventional methods of operative interference were either impossible or undesirable. These cases were, as a rule, operated by posterior sclerotomy or sclerectomy, followed either immediately or shortly afterward by a supplemental operation on the anterior ocular segment. In a few cases trephinations were done.

The chief advantage of posterior sclerotomy is a deepening of the anterior chamber for later entrance into the anterior segment. To counter this advantage there are numerous complications. The additional trauma to the eye may lead to vitreous hemorrhage, detached retina and a further increase in the inflammatory

reaction, all of which work against a successful result in glaucoma surgery. In only 3 cases in which posterior sclerotomy or posterior sclerectomy was employed, was operative effort successful.

In this group, 23 patients were operated upon with posterior sclerotomy and 9 with posterior sclerectomy, plus iridectomy, iridencleisis and trephination. The secondary operation in the 3 successful cases were 2 iridencleises and 1 trephination.

Among the 29 failures, there were 15 trephinations, 4 iridectomies and 10 iridencleises as the secondary operation. The cause of failure in 4 cases was vitreous hemorrhage, in 1 case detachment of retina and in 2 cases cataract. In these 7 cases, as well as the other 33, the tension rose and eventually only bare light perception or less remained.

All 9 posterior sclerectomies that were done in this group failed to control the tension, and in each case the postoperative course was stormy. The tension rose and was often accompanied by a low-grade iritis. Seven of the cases showed anterior-chamber or vitreous hemorrhage. In 5 of these cases enucleation eventually had to be performed.

The pathology records for the enucleated eyes report vitreous hemorrhage, choroidal hemorrhage, detached retina, iritis and endophthalmitis. Dislocation of the lens system into the vitreous and prolonged hypotony were also clinically observed.

Group II. The second group included a group of recurrent cases which had, as a rule, been uncontrolled by miotics or previous operations, in which the organic changes in the eye were not advanced and which, in general, still offered a fair prognosis for control of the glaucoma and some retention of vision. In this group, iridencleisis was chosen in 58 cases. Of these, 78 percent were successful and 22 percent unsuccessful.

In the 44 successful cases, 16 patients had responded poorly to miotics preoperatively, while in 28 the operation was performed after the tension fell to normal in response to the use of miotics. The failures were equally distributed whether or not the eye responded to miotics. The complications noted among the failures were delayed reformation of the anterior chamber, the formation of anterior peripheral synechias, occasional secondary cataract and failure to control tension.

Ten cases in group II were operated by trephination; success occurred in only 2 cases. In the 8 failures the following complications occurred: (1) the intraocular pressure again rose following a period of inflammation; (2) there was a subsequent formation of complicated cataract; (3) herniation of the ciliary body and the lens into the wound occurred; (4) rupture of the lens capsule often blocked the trephine opening. The factors precipitating this last-named complication appeared to be the small size of the opening and the sudden release of great pressure.

In 3 cases of simple iridectomy done in this group, there were 2 successes. Iridectomy was usually reserved for those patients in their initial attack of glaucoma uncomplicated by other pathologic conditions.

Group III. These were a group of patients usually in their first attack, many of whom could be controlled by miotics, in whom there were few, if any, established organic changes, and who offered therefore excellent prospects for control of the disease. In this group, 46 cases were operated upon by iridectomy with 37 (81 percent) successes. In those cases in which the patient was in his first attack of glaucoma, and in which the intraocular pressure fell to normal prior to operation, iridectomy was successful in 90 percent.

The failures in iridectomy occurred in patients who had had 2 or more congestive attacks, or in patients in whom the initial ocular tension did not respond to the use of miotics. In 3 of the failures, the tension was controlled for over 6 months with a subsequent rise of tension that necessitated reoperation. Seven failures were in patients who failed to respond to preoperative miotics. It is emphasized that in approximately 6 percent of the cases reviewed, pressure rose some months after an apparently successful iridectomy.

Eight patients were operated upon by iridencleisis in this group of patients with acute uncomplicated glaucoma. Six of these suffered no complications and retained useful vision and full fields. In the other 2 cases, cataract was an early complication. One other case developed cataract 9 months after surgery, and there was a low-grade iritis with rise of tension in the remaining failure.

Comment. It is apparent that posterior sclerotomy and sclerectomy in acute congestive glaucoma are not benign operative procedures. Failures occurred in 29 out of 32 cases so operated. Even though these patients all presented a most unfavorable preoperative prognosis, with advanced inflammatory glaucoma, organic changes in the eye and, usually, flat anterior chambers, the conclusion is nevertheless inescapable that these already inflamed eyes, with dilated and engorged vessels, were not able to withstand the insult incident to the operative procedure. Trephination is also apparently not a propitious selection for anterior segment operation in acute inflammatory glaucoma. The forward displacement of the lens system tends to block the trephine opening and late rupture of the lens capsule is not infrequent.

The good results following iridectomy in favorable cases were to be expected, and are in line with other reports on the use of this operation in acute inflammatory glaucoma. However, almost equally good results were obtained with iridencleisis in a group of cases which, on the whole, offered a more gloomy preoperative prognosis. The figures here reported would indicate that in such cases iridencleisis may be the operation of choice.

A striking finding was the bilaterality of the disease. Acute glaucoma occurred in both eyes in 72 percent of the cases, and both eyes were affected within 6 months. If the subsequent course of the patients with unilateral glaucoma were known, this figure might well be higher. In 2 cases in which the acute glaucoma was unilateral and in which the operation did not succeed, a malignant melanoma was found after it was necessary to enucleate the eye. (Am. J. Ophth., Oct. 1951, H. K. Goldberg)

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The Use of Antithyroid Drugs During Pregnancy

A study of hyperthyroidism in association with pregnancy supported the view that in hyperthyroidism there is an increased incidence of menstrual irregularity, diminished fertility and a higher than normal rate of fetal loss through miscarriage and stillbirth. Over the past 30 years, reports on the treatment of hyperthyroidism during pregnancy with Lugol's solution, with or without subtotal thyroidectomy, have indicated that the incidence of miscarriage and stillbirth is reduced by therapy, but remains higher in thyrotoxic than in normal patients. Bell reported (1950) that when hyperthyroidism was treated with antithyroid drugs followed by thyroidectomy, the incidence of fetal loss was still 33 percent.

Over-treatment and consequent hypothyroidism can also lead to obstetric difficulties. Hypothyroidism is most apt to lead to fetal loss if it occurs early in pregnancy; late in pregnancy a normal outcome is to be expected, but under certain circumstances compensatory enlargement of the fetal thyroid may occur.

Radioactive iodine is not widely used during pregnancy because of the finding that after the 3d month the fetal thyroid collects significant amounts of radioiodine. However, patients treated for hyperthyroidism before pregnancy have carried through pregnancy in a normal way.

When hyperthyroidism is treated with an antithyroid drug, the dosage is so adjusted as to bring about a state of euthyroidism and when this is done, enlargement of the thyroid does not usually occur. As the dose of antithyroid drug used to restore the hypermetabolism of thyrotoxicosis to normal still permits the thyroid gland to form and to secrete a normal amount of thyroid hormone, there is reason to suppose that the fetal thyroid would not be significantly suppressed by appropriate treatment of the thyrotoxic mother. Furthermore, though the commonly employed antithyroid drugs can be shown to traverse the placenta, the fetus is probably exposed to a lesser concentration than is the mother.

Over a period of 6 years, 19 patients suffering from hyperthyroidism were treated with antithyroid drugs during or shortly before pregnancy. The patients were not selected; all were routinely treated with antithyroid drugs. They were seen at intervals of 4 to 6 weeks and the dosage adjusted on the basis of the response as judged by clinical criteria.

Most of the patients were treated with propylthiouracil; the usual dosage of 100 mg. every 8 hours was used. When the patients were considered to be euthyroid, the dosage was reduced to 50 mg. every 8 hours. In most instances, the smaller dose was given during the latter half of gestation and usually treatment was stopped at parturition. In 13 instances, propylthiouracil alone was used; in 1, mercaptoimidazole was used in a maximal dose of 100 mg. once daily; in 2, methylmercaptoimidazole was used, 5 mg. every 8 hours, and 3 patients first received propylthiouracil and later methylmercaptoimidazole. These dosages completely controlled the hyperthyroidism and in no instance was frank hypothyroidism induced during pregnancy. There were no side effects. No iodine was used during or after therapy with the antithyroid compound, and thyroid was prescribed in only 1 instance during pregnancy.

In the 19 patients there were 22 completed pregnancies, yielding 22 living children who showed no evidence of thyroid disturbance or of goiter. There were 3 premature deliveries. Sixteen of the mothers remained well after the antithyroid therapy was stopped; 3 required further treatment.

The observations in these patients suggest that antithyroid therapy can be safely continued throughout pregnancy without harm to either the mother or child. They suggest further that gestation is more apt to be normal when the hyperthyroidism is thus adequately treated than when it is not. The findings also indicate that, if congenital anomalies occur during pregnancy complicated by hyperthyroidism, these anomalies are not brought about by the treatment.

During pregnancy, especially during the last trimester, it may be difficult to evaluate the status of thyroid function. The increased rate of heat production, the flushed, warm, moist and pigmented skin, the tachycardia, easy fatigue and breathlessness, might suggest hyperthyroidism in the normal pregnant woman as term approaches. Contrariwise, a false impression of early myxedema might be suggested by those patients who exhibit excessive weight gain, edema, puffiness of the face, pallor, lethargy and somnolence. For these reasons, it is probably advisable to administer a small dose of antithyroid drug, such as 50 mg. of propylthiouracil every 12 or 8 hours, during the last 3 months of pregnancy. Though this was the course usually followed in this investigation, an alternative and perhaps better procedure involves the use of full doses of the antithyroid agent counterbalanced with a full supplement of thyroid. The larger dose of antithyroid drug would insure against significant thyrotoxicosis, while 2 to 4 gr. of thyroid daily would be adequate to prevent hypothyroidism. This procedure has often been employed in other cases in which, for one reason or another, it was not feasible to observe the patients frequently to adjust the dosage of antithyroid drug.

In the present study the medication was usually discontinued at the time of delivery. This permitted the baby to be nursed without danger of transmission of antithyroid drug to the infant in the milk. If continued therapy should be required, the child should be fed artifically. (J. Clin. Endocrinol., Oct. 1951, E. B. Astwood)

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1952 Session of the Trudeau School of Tuberculosis

The Trudeau School of Tuberculosis has announced that its thirty-eighth annual session will be held at Saranac Lake, New York, from 28 April to 23 May 1952. The subject matter will cover all aspects of pulmonary tuberculosis and also certain phases of other chronic chest diseases, including those of occupational origin.

Medical officers who desire to attend the session under the auspices of the Navy Graduate Training Program may submit requests via official channels to the Chief of the Bureau of Medicine and Surgery. The $100.00 tuition fee for officers approved to attend the session will be borne by BuMed, and authorization orders ONLY provided in accordance with BuSandA-BuPers Joint Ltr. of 16 March 1951, NDB-51-229. No reliefs can be furnished for officers during the period they are attending the course. (Professional Div., BuMed)

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Dental Training Films

The following naval dental training films have recently been added to Navy Training Aids Libraries in the various Naval Districts and River Naval Commands:

MN-6722 - "Complicated Exodontia-Introduction", 17 1/2 minutes, color, sound; deals with the fundamental procedures involved in the successful removal of all teeth. Particular attention is given to those teeth which require more than the use of forceps alone for their proper extraction. Basic principles underlying a proposed plan for treatment are demonstrated.

MN-6721 - "Partial Dentures-Biomechanics", 16 minutes, color, sound; demonstrates the influence of the forces of mastication on the design of partial dentures. By dividing the parts of partial dentures into bracing, supporting and retaining elements, important construction details are emphasized.

MN-6720 - "Complete Dentures-Alginate Impressions", 17 1/2 minutes, color, sound; illustrates a technic for nonpressure full denture impressions using alginate (irreversible hydro colloid) in a loose fitting, perforated baseplate tray. (Dental Div., BuMed)

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From the Note Book

1. The October 1951 issue of The Military Surgeon honors Brig. Gen. R. O. Dart, MC, USA, Ret. The issue consists of a collection of papers on pathology. The contributors represent the staff of consultants of the Armed Forces Institute of Pathology and the Federal medical services. The papers are a tribute to the breadth of interest and the leadership of General Dart.

2. Talking books for the blind are sets of special, long playing phonograph records, 12 inches in diameter and made of a thin, semi-flexible plastic material. Each disk has title and page number in braille. A printed book of average length requires 18 double-faced records. (Science News Letter, 20 Oct. 1951)

3. A follow up study of therapy in 48 culturally proved cases of brucellosis will be found in A. M. A. Archives of Internal Medicine, October 1951. (W. W. Spink, W. H. Hall, R. Magoffin)

4. Dural sinus venography as an aid in a variety of circumstances and in the clarification of some hitherto obscure problems is discussed in Radiology, October 1951. (B. S. Ray, H. S. Dunbar & C. T. Dotter)

5. The development of a pump-oxygenator to replace the heart and lungs, an apparatus applicable to human patients, is described in Annals of Surgery, October 1951, C. Dennis et al.

6. A universal antidote for unknown poisons is reported by Dr. J. M. Arena and Dr. G. Taylor of Duke University. The ingredients are burned toast, strong tea and milk of magnesia. The burned toast provides pulverized charcoal to help absorb poisonous materials in the stomach. The tea helps offset an alkaline poison and the milk of magnesia helps offset an acid poison. The antidote could well provide a stop-gap for people in rural areas isolated from quick medical attention. (Drug Topics, 22 Oct. 1951)

7. A new, active antithyroid agent, 1-methyl-2-mercaptoimidazole, is discussed in Journal of Clinical Endocrinology, October 1951, by E. C. Bartels and R. W. Stogren.

8. Early diagnosis and treatment of cancer of the lung is discussed in New England Journal of Medicine, 11 October 1951, R. H. Overholt and F. M. Woods.

9. The average length of life in the United States has increased to a record high of nearly 68 years. The new figure shows a gain of almost half a year over the average lifetime indicated by 1948 death rates. (PIO, FSA, PHS, 19 Oct. 1951).

10. Ball mill, a small tubular affair for use in medical laboratories to beat highly dangerous bits of diseased matter into an emulsion, is made of stainless steel and uses inside smashing balls of the same material. Samples may be withdrawn through the needle of a syringe without opening the tube. (Science News Letter, 27 Oct. 1951)

11. Various technics for ascending and descending stairs and curbs using braces and crutches appear in Occupational Therapy and Rehabilitation, October 1951. (M. Hoberman & E. F. Cicenia)

12. Present concepts concerning the surgical management of duodenal ulcer appear in the New England Journal of Medicine, 18 October 1951, A. W. Allen.

13. Because 83 children have died of lead poisoning in the last 20 years, Baltimore, Md. has passed a new housing regulation barring the use of paint containing lead pigment for use in the interior painting of any dwelling or dwelling unit. A total of 293 cases of lead poisoning was reported in children from 1 January 1931 to 30 June 1951. (Indust. Health Monthly, Nov. 1951)

14. Following several years' dependence on existing hospital facilities in the coal fields, the United Mine Workers Welfare and Retirement Fund has decided to sponsor construction of new hospitals in 10 critical areas. (Washington News, J. A. M. A., 27 Oct. 1951)

15. An article on the "Nature of Air Raid Casualties" will be found in J. A. M. A. of 27 October 1951, by C. F. Enloe, Jr.

16. The Public Health Service, Federal Security Agency, announces the publication of "Environment and Health." The book discusses health measures applied to the natural environment, water, air, food and the various forms of animals and plant life which affect public health. Copies of the book are available from the Superintendent of Documents, Government Printing Office, Washington 25, D. C., $0.75 each.

17. A joint Army-Navy medical investigating team, who have recently completed studies in Korea, found that Korean body lice are resistant to 10 percent DDT powder. In fact, both lice and eggs actually seemed to thrive on both the powder and DDT impregnated cloth. (PIO, BuMed., 7 Nov. 1951)

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BUMED CIRCULAR LETTER 51-140 22 October 1951

NOT PRINTED

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BUMED CIRCULAR LETTER 51-141 26 October 1951

From: Chief, Bureau of Medicine and Surgery
To: All Medical Department Activities and Facilities

Subj: Dependent wives of discharged members of the naval service; medical (maternity) care of

Ref: (a) BUMED Cir Ltr No. 45-256
(b) BUMED Cir Ltr No. 49-91

1. References (a) and (b) are canceled and superseded.

2. Prospective mothers, who are dependents (wives) of discharged personnel, already under the care of medical officers at naval activities may be continued under out-patient prenatal medical care or hospitalization when in the opinion of the medical officer undue hardship would result from refusal of such care. The out-patient treatment provided under this authority shall not be continued beyond 30 days after discharge of the father from the naval service.

H. L. Pugh

The above letter will not be printed in the Navy Department Bulletin.

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BUMED CIRCULAR LETTER 51-142 26 October 1951

From: Chief, Bureau of Medicine and Surgery
To: All Naval and Marine Corps Activities (Continental);
Commandants of the 10th, 14th, 15th and 17th Naval Districts;
Naval Hospital, Yokosuka, Japan; and Naval Station, Sangley Point,
Republic of the Philippines

Subj: Annual Requisition for Care of the Dead

Ref: (a) Articles 17-27, 17-28 and 17-54(3), MMD
(b) Article 17-54(1), MMD
(c) Chapter 3, Volume II, BuSandA Manual

Encl: (1) Example setting forth items called for in Schedule of Uniform Burial Contract, to be used as a guide for preparation of annual requisition for care of the dead

1. In order to facilitate the handling of the care of the dead, it is considered necessary and desirable that contracts for the care of the dead be established at those activities whose requirement for services for the care of the dead is in sufficiently large volume to warrant the administrative procedures and expense incident to the letting of contracts. Such contracts are not considered warranted at smaller activities which may or may not have need for any services in connection with the care of the dead, nor in cases where death occurs while on leave or otherwise away from a naval activity. Activities not having a contract for care of the dead shall follow the instructions outlined in reference (a).

2. Those activities desiring contracts for care of the dead shall prepare an annual requisition in accordance with this letter, references (b) and (c) and such other instructions as may be promulgated by proper authority. Approval of annual requisitions for care of the dead shall be in accordance with instructions promulgated by this Bureau in the call for annual estimate of expenditures.

3. The Schedule of the Uniform Burial Contract, as issued by the Bureau of Supplies and Accounts to contracting officers, calls for the furnishing of eight items. These items are set forth in enclosure (1), given as a guide for the preparation of annual requisitions for the care of the dead. If any of these items are not required or if it is desired to procure additional items, the "Materials and Services" section of the Schedule may be modified or altered to meet local requirements. Additional items required should be justified. The requisition shall also include a statement as to the number of deaths serviced under a similar contract during the preceding fiscal year. Accounting instructions for care of the dead services are promulgated annually by the Bureau of Medicine and Surgery. Quantities should be based on past experience in order that prospective bidders may know probable requirements. Figures given in example should not be used.

4. When Navy standard caskets are not available, it is desired, in general, that use of contract caskets shall be as follows:

(a) For local burial or shipment within the United States when hermetical sealing is not indicated, use Type II casket.

(b) For overseas shipment and special cases where extra protection is required or where law or transportation regulations require, use Type I casket.

5. At naval hospitals or other activities beyond the continental limits of the United States, the instructions regarding use of local contract caskets will apply only when interment is to be local. All bodies to be returned to the United States shall be encased in Navy standard caskets.

H. L. Pugh

Circular Letter 51-142 will not be printed in the Navy Department Bulletin.

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BUMED CIRCULAR LETTER 51-143 1 November 1951

From: Chief, Bureau of Medicine and Surgery
To: Medical Department Activities and Facilities

Subj: Red Cross activities in the Naval Medical Department

Ref: (a) BUMED Cir Ltr No. 44-227
(b) BUMED Cir Ltr No. 47-34
(c) BUMED Cir Ltr No. 47-67
(d) BUMED Cir Ltr No. 50-81
(e) BUMED Cir Ltr No. 51-50
(f) Manual on the Geneva Convention and Naval Medical Liaison with the American Red Cross, NAVMED-903
(g) Art. 3-37, The American National Red Cross, ManMedDept
(h) Art. 21-25, Representatives of the American Red Cross (medical care), ManMedDept
(i) Ch. 23, Sec. VIII, Release of Information From Records, ManMedDept
(j) Art. 25-11, Donations, ManMedDept
(k) Appendix A, Treaties and Conventions, ManMedDept

1. References (a) through (f) are canceled.

2. This circular letter, which will not be printed in the Navy Department Bulletin, describes the program to be conducted by the Red Cross in Medical Department Activities and Facilities, subject to such administrative regulations governing military welfare and recreation as may be prescribed.

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BUMED CIRCULAR LETTER 51-144 1 November 1951

From: Chief, Bureau of Medicine and Surgery
To: All Ships and Stations

Subj: BUMED circular letters; cancelation of several

1. The following BUMED circular letters are canceled for the reasons indicated:

Cir Ltr	NDB issue and No.	Subject (in brief)	Reason
42-91		X-ray films to V. A.	Art. 23-310(3)(g), ManMedDept.
42-109		Social histories to V. A.	Do.
44-43		Records and reports re joint hospitalization in overseas medical units.	Later instructions in appropriate ManMedDept chapters.
48-25		Retirement of medical-supply-activity records.	Art. 23-303, ManMedDept, covers NAVMED forms and BUSANDA records retirement schedules covers other forms used by medical supply activities.
48-38		Patients' Jackets and Clinical Records.	Art. 23-303(6)(d)(item 617), ManMedDept.
49-112	Jul-Dec 1949, 49-660, p 114.	Civilian personnel and industrial health jackets.	Art. 23-303(6)(d)(item 608), ManMedDept.
50-10		Clinical records for V. A.	Art. 23-310(3)(g), ManMedDept.
50-33		Joint statement of policy on release of information from medical records.	Sec. VIII, ch. 23, ManMedDept.
50-133		Transfer of X-ray films with patients.	Art. 23-303(6)(d)(item 629), ManMedDept.
51-73		Chs. 3 and 23 of ManMedDept; and cancelation of circular letters.	Served its purpose.

Cir Ltr	NDB issue and No.	Subject (in brief)	Reason
51-98	30 Jun 1951, 51-465, p 11.	Cancelation of circular letters.	Served purpose as letter of cancelation.
51-117	15 Aug 1951, 51-577, p. 9.	do	Do.
51-136		do	Do.
51-139	31 Oct 1951	do	Do.

2. This letter shall be considered canceled after the above cancelation actions have been noted.

C. J. Brown
Acting

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BUMED CIRCULAR LETTER 51-145 2 November 1951

From: Chief, Bureau of Medicine and Surgery
To: All BuMed Managed Activities, Continental

Subj: Typewriters; purchase, utilization, replacement, and disposal

Ref: (a) BuMed Cir ltr 51-112 of 30 July 1951
(b) BuMed Cir ltr 51-133 of 28 Sep 1951
(c) ONM ltr M71:KAG:ilh OGC/MHS:mbr serial 121 of 18 June 1951
(d) NPR&D Reg. No. 1 (Revision of 15 Apr 1949)
(e) BuSandA ltr S-111 (B) JJ54 A2-6/1 of 5 Sep 1951 (NDB, 15 Sep 1951 51-645)
(f) BuSandA ltr S- 111(B) JJ54 A2-6/1 of 12 Sep 1951 (NDB 15 Sep 1951 51-646)

1. References (a) and (b) are hereby cancelled and superseded.

2. By reference (c) this Bureau was assigned responsibility for enforcing Management Regulation No. 18 of the General Services Administration.

3. Accordingly all activities shall immediately effect measures to insure:

(a) That all persons within the command are cognizant of and comply with instructions relative to adequate and proper care of typewriters.

(b) That repairs to typewriters are accomplished only by qualified personnel.

(c) That machines are distributed so that their maximum life is assured. (Reassignment of machines should be planned in order that those in the best mechanical condition will be available for the most exacting service and those in poorer condition will be assigned to less important operations.)

(d) That wide-carriage and special type machines used for limited periods of time should be so distributed to enable several departments to have access to them as required.

4. The following minimum standards for the replacement of typewriters have been established:

"Typewriters shall not be purchased for replacement purposes unless it is determined that the estimated cost of necessary repairs or rebuilding of each typewriter being replaced will equal or exceed at lowest available rates of the percentage of replacement costs as shown in the 'Standard Replacement Cost Percentage Scale'. Replacement cost as used herein is the current price of a replacement typewriter less the sale price or trade-in value of the used typewriter."

Standard Replacement Cost Percentage Scale

Percentage of replacement cost (new price less sale or trade-in value) which will justify replacement in lieu of repair--------	Year after year-of-manufacture as shown by manufacturer's serial number										
	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th
	80%	80%	80%	70%	70%	60%	50%	40%	30%	20%	10%

5. This directive shall not be interpreted to mean that replacement is mandatory when standards permit replacement. Equipment which is in useable and workable condition shall be retained and used even though standards permit replacement.

6. Activities submitting requisitions for typewriters shall indicate thereon the following information:

(a) The number of typewriters on hand.
(b) Whether the requirement is for replacement of typewriters or additional typewriters.
(c) Certification that present requirements cannot be filled from supply of typewriters on hand at the activity.
(d) If for replacement, the typewriters to be replaced shall be surveyed in accordance with the requirements of reference (e); and the requisition shall contain the information required by paragraph 3 (e) of reference (e). A copy of the approved survey shall be forwarded with the requisition.
(e) If replacement by exchange is desired, the provisions of reference (f) shall be complied with. A copy of the approved survey shall be forwarded with the requisition.

7. Excess machines shall be reported in accordance with reference (d).

8. Personal Property Management Regulation No. 18 defines "typewriter" as follows:

"Typewriter" means manually and electrically operated machines, having standard or special keyboards, designed to produce printed characters by impression of type upon paper through the medium of an inked ribbon. It includes the varityper, hektowriter, proportional spacer and portable-type machines, but does not include bookkeeping, billing, or teletype machines."

H. L. Pugh

The above letter will not be printed in the Navy Department Bulletin.

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BUMED CIRCULAR LETTER 51-146 7 November 1951

From: Chief, Bureau of Medicine and Surgery
To: All Ships and Stations having Dental Personnel

Subj: Dental Prosthetic Technicians and Dental Repair Technicians; training of

Ref: (a) BuMed CirLtr 51-31 of 14 Feb 1951
(b) Catalog of Dental Technician Schools & Courses (NavMed P-1309)

1. Reference (a) is hereby cancelled and superseded. In order to provide the naval dental service with an adequate number of trained Dental Prosthetic Technicians and Dental Repair Technicians who will be competent to fulfill the descriptions of job requirements in the Manual of Enlisted Navy Job Classifications, personnel of the Dental Rating Group in pay grades E-2, E-3, E-4, and

E-5 only will be considered for assignment to this training in the future. Minimal qualifications are as follows:

a. Must be a volunteer (mandatory)
b. Must be recommended by a dental officer (mandatory)
c. Must be a Dental Technician, General (mandatory)
d. Manual dexterity

2. In addition to the above minimal qualifications a candidate for the Dental Repair course should possess an elementary knowledge of electricity.

3. Due to the technical nature of this training, personnel recommended should be screened very carefully to insure that they possess the necessary qualifications. All of the above listed minimal qualifications are not mandatory since it is obvious that no definite dexterity or aptitude standards for the selection of such candidates can be established. However, it is believed that the attrition rate during the training period can be greatly reduced if the candidates are carefully screened with the view toward fully meeting the minimal qualifications enumerated in paragraphs 1 and 2.

4. In accordance with reference (b), recommendations from dental officers who examine candidates for training should be submitted to the appropriate district or staff headquarters where they will be considered by the district or staff dental officer for filling assigned quotas. Districts and staffs not receiving a sufficient quota proportionate to available candidates should request an increase in quota; conversely a reduction in quota should be requested when the assigned quota is too large. In no circumstance should candidates be assigned purely for the purpose of filling a quota when it is apparent that they do not meet minimal aptitude requirements, or do not volunteer for the training.

5. It is desired that the contents of this circular letter be made known to all dental personnel. H. L. Pugh

The above letter will not be printed in the Navy Department Bulletin.

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BUMED CIRCULAR LETTER 51-147 13 November 1951

From: Chief, Bureau of Medicine and Surgery
To: BuMed Management Control Activities as indicated

Subj: Civilian Personnel Services Work Measurement Program

Ref: (a) BuMed Cir Ltr No. 50-128 of 27 Nov 1950
(b) CPL&D 51-86 of 25 Jun 1951

1. Reference (a) is hereby modified.

2. Under the instructions contained in reference (a) and enclosure (1) thereto, Medical Department field activities were not required to report work units for subfunction 7, "Classification Act Positions Analyzed Individually." However, as a result of the promulgation of reference (b), some Medical Department field activities now have authority from the Area Wage and Classification Offices to take certain types of classification actions.

3. Therefore, the work units completed in performing the duties defined in reference (a) for this subfunction shall be reported on NAVEXOS 3211 (Rev. 10-50), in addition to the man-hours expended therein, beginning with the report for the quarter ending 31 December 1951.

4. This procedure will provide further coverage work measurement-wise in the civilian personnel services field.

H. L. Pugh

The above letter will not be printed in the Navy Department Bulletin.

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